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APPENDICES B1 - B3

EVALUATION MEASUREMENT AND
VERIFICATION

2006-2008 ENERGY EFFICIENCY PORTFOLIOS

APPENDIX B-1

SUMMARY OF EM&V STAKEHOLDER
PARTICIPATION

SUMMARY OF EM&V STAKEHOLDER PARTICIPATION

The Commission initially set the stage for the 2006-2008 EM&V activities with a February 6, 2004 Assigned Commissioner Ruling in Rulemaking (R.) 01-02-028.¹ In response to that ruling, the Energy Division held a series of workshops in 2004 to develop the performance basis and protocols for the evaluation, measurement and verification of energy efficiency programs.²

Following the initial Energy Division workshops on the performance basis and EM&V protocols, the Commission adopted D.05-01-055, which assigned the Utilities the responsibility of overseeing the selection of energy efficiency portfolios. The Commission determined that the EM&V structure must be free of conflicts of interest that could bias EM&V results. Accordingly, the Commission assigned the Energy Division the responsibility for overseeing EM&V studies used to:

“(1) measure and verify energy and peak load savings for individual programs, groups of programs and at the portfolio level (including load impacts, useful measure life, savings retention and persistence studies), (2) generate the data for savings estimates and cost-effectiveness inputs, (3) measure and evaluate the achievements of energy efficiency programs, groups of programs and/or the portfolio in terms of the “performance basis” established under Commission-adopted EM&V protocols and (4) evaluate whether program or portfolio goals are met. For purposes of this discussion, we refer to this category of studies as “program and portfolio impacts-related” studies”³

The Commission also established a process for stakeholder/public participation, identifying the following opportunities for stakeholder participation in the EM&V process:

1. Development of Protocols for Conducting EM&V.
2. Development of the Overall EM&V Plan.
3. Providing draft study results for stakeholder review and comment.⁴

¹ *Assigned Commissioner’s Ruling Establishing Schedule for Addressing High Priority Issues During 2004, and Notice of Workshop on Administrative Structure*, issued February 6, 2004 in R.01-08-028.

² D.05-04-051, *Interim Decision. Updated Policy Rules for Post-2005 Energy Efficiency and Threshold Issues Related to Evaluation, Measurement and Verification of Energy Efficiency Programs*, April 25, 2005, p. 11.

³ D.05-01-055, *Interim Opinion on the Administrative Structure for Energy Efficiency: Threshold Issues*, February 3, 2005, p. 115.

⁴ D.05-01-055, p. 115.

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In order to mitigate the potential for disputes surrounding the EM&V process, the Commission further directed the Energy Division to form teams of program administrators and program implementers to provide input on the scope of EM&V studies, to ensure that evaluation contractors have all the data needed to conduct EM&V activities, and to provide program administrators and implementers the opportunity to review and comment on the evaluation methodology and results before the study results become final.⁵

Decision 05-04-051 adopted a performance basis for measuring the results of energy efficiency programs. The Commission determined that the performance basis representing the net resource benefits of the program portfolio should include per unit kWh, kW and therm savings measured through load impact studies, less program costs, and that these assumptions, including the level of program participation, should be tried up based on ex post studies.⁶ D.05-04-051 provided specific guidance to the Energy Division staff for the development of EM&V budgets, plans, and protocols.⁷

After the issuance of D.05-04-051, the Energy Division⁸ staff developed the 2006-2008 EM&V budget and plan in collaboration with EM&V experts from the Utilities.⁹ An August 30, 2005 Administrative Law Judge (ALJ) ruling solicited comments on the Energy Division and Utilities' EM&V budgets,¹⁰ which the Commission adopted in D.05-11-011.

Concurrent with the development of the EM&V budget and plan, the Energy Division circulated drafts of EM&V administration plans and held public workshops in July 2005 to obtain feedback on those drafts. An August 3, 2005 ALJ ruling solicited comments on the draft EM&V administration plans,¹¹ and a September 2, 2005 ALJ ruling adopted the EMV

⁵ D.05-01-055, p. 117.

⁶ D.05-04-051, Ordering Paragraphs 5, 8, and 9.

⁷ D.05-04-051, Ordering Paragraphs 10 through 16.

⁸ During 2005 and 2006 the Energy Division retained the assistance of a staff person from the CEC to help with EM&V planning. This collaboration was referred to in official Commission documents as "Joint Staff." Because all authority in this collaborative process rested with Commission staff and the collaborative process did not last beyond 2006, the ORA/TURN Proposal refers to Energy Division as the active agency.

⁹ D.05-11-011, p. 4.

¹⁰ *Administrative Law Judge's Ruling: Requesting Comments on Proposed Evaluation, Measurement, and Verification Plans and Budgets for 2006-2008 Program Cycle*, issued August 30, 2005 in Application 05-06-004 et al.

¹¹ *Administrative Law Judge's Ruling Soliciting Comment on Joint Staff's Draft Proposal on EM&V Protocol Issues*, issued August 3, 2005, in R.01-08-028.

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administration plans with clarifications.¹² On October 4, 2005, the assigned ALJ issued a ruling soliciting comments on the Energy Division's draft EM&V process protocols and EM&V technical protocols.¹³ The Energy Division revised the draft protocols in response to comments, posted the revised protocols on the Commission's website for public review on December 2, 2005 and held a two-day workshop to discuss revisions on December 13 and 14, 2005.¹⁴ A January 11, 2006 ALJ ruling adopted the revised EM&V process protocols, including:¹⁵

- 1) **"Performance Basis Protocol"** - A protocol identifying the specific performance basis parameters to be measured through impact evaluations and outlining the process and schedule that Energy Division staff will follow for verifying the parameters used to calculate each performance basis adopted by D.05-04-051.¹⁶
- 2) **"Public Process Protocol"** - A protocol summarizing the procedural steps and schedule that Energy Division will follow to develop the research scope for each impact evaluation used to measure performance basis parameters, as well as a schedule for public workshops to vet the research scopes.¹⁷
- 3) **"Review Protocol"** - A protocol outlining the process that Energy Division will follow to coordinate public review and input on impact evaluation and market effects evaluation studies.¹⁸

The Energy Division staff held two days of additional workshops on February 14 and 15, 2006 followed by another round of opening and reply comments in March 2006.¹⁹ Following this final round of stakeholder review, the assigned ALJ adopted the California Energy Efficiency Evaluation Protocols: Technical Methodological and Reporting Requirements for Evaluation Professionals (Evaluator Protocols) by ruling on April 25, 2006. The basis of the

¹² *Administrative Law Judge's Ruling on EM&V Protocol Issues*, issued September 2, 2005 in R.01-08-028.

¹³ *Administrative Law Judge's Ruling Soliciting Comments on Draft Protocols for the Evaluation, Measurement and Verification of Energy Efficiency*, issued October 4, 2005 in R.01-08-028.

¹⁴ *Administrative Law Judge's Ruling Adopting Protocols for Process and Review of Post-2005 Evaluation, Measurement and Verification (EM&V) Activities*, issued January 11, 2006 in R.01-08-028 (ALJ Ruling Adopting Protocols), p. 4.

¹⁵ ALJ Ruling Adopting Protocols.

¹⁶ ALJ Ruling Adopting Protocols, Attachment 2.

¹⁷ ALJ Ruling Adopting Protocols, Attachment 3.

¹⁸ ALJ Ruling Adopting Protocols, Attachment 4.

¹⁹ *Administrative Law Judge's Ruling Adopting Evaluator's Protocols for the Evaluation of Energy Efficiency Programs*, issued April 25, 2006 in R.06-04-010, p. 3.

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Evaluator Protocols was the June 2004 California Evaluation Framework (Evaluation Framework) prepared under contract for SCE on behalf of the Utilities pursuant to D.01-11-066.²⁰ Both the Evaluation Protocols and Evaluation Framework continue to function as guiding documents for the Energy Division's current energy efficiency program evaluation work.²¹

The assigned ALJ issued a January 2, 2007 ruling revising some of the EM&V protocols adopted by the January 11, 2006 ALJ ruling.²² The January 2, 2007 ALJ ruling modified the schedules embedded in the previously adopted "Performance Basis Protocol" and "Public Process Protocol" to account for delays experienced by Energy Division in releasing EM&V Requests for Proposals (RFPs) and hiring EM&V contractors. Decision 07-09-043 reflected this schedule change in the RRIM process.²³

By late 2007 the Energy Division had hired EM&V contractors and began to release draft evaluation plans in accordance with the Public Process Protocol revised by the January 2, 2007 ALJ ruling.²⁴ The Utilities and other stakeholders submitted written comments to Energy Division in early 2008.²⁵ The Energy Division also scheduled a series of conference calls and webinars in early 2008 to allow parties and stakeholders to discuss the draft evaluation plans with Energy Division staff and their contractors.²⁶ Throughout 2008 and 2009, while work proceeded on the implementation of the EM&V plans, the Energy Division and its contractors provided opportunities for stakeholders, including the Utilities, to review and comment on many aspects of the implementation of the EM&V plans, including but not limited to updates to

²⁰D.01-11-066, p. 20; *California Energy Efficiency Evaluation Protocols: Technical Methodological and Reporting Requirements for Evaluation Professionals*. The Evaluation Protocols and The Evaluation Framework can be downloaded from <http://www.cpuc.ca.gov/General.aspx?id=5399>.

²¹ Energy Division Responses to ORA Data Requests, available at <http://ora.ca.gov/RRIMRehearing.aspx>.

²² *Administrative Law Judge's Ruling Revising Protocols for Process and Review of Post-2005 Evaluation, Measurement, and Verification (EM&V) Activities and Addressing Next Steps for Finalizing the Annual Reporting Requirement*, issued January 2, 2007 in R.06-04-010.

²³ D.07-09-043, Attachment 6: EM&V Studies: Schedule and Linkage to Earnings Claims.

²⁴ The Energy Division's draft evaluation plans and comments on those plans can be viewed on the Energy Division's Public Document Area (PDA). The PDA is Energy Division's custom web application used to keep a record of draft EM&V documents and comments from stakeholders on those draft documents. The PDA is also a repository for final documents. The PDA can be accessed at <http://www.energydataweb.com/cpuc/search.aspx>.

²⁵ Comments on Energy Division's evaluation plans available at <http://www.energydataweb.com/cpuc/search.aspx>.

²⁶ See Appendix B-2 for a detailed timeline of the EM&V stakeholder participation process.

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ex-ante PEB parameters, site-specific M&V plans,²⁷ survey instruments, methodological clarifications, and various EM&V administrative issues.²⁸

On May 5, 2008, the Energy Division released the Interim Performance Basis Report required by the January 2, 2007 ALJ ruling. Because actual evaluation data was not available when the Interim Performance Basis Report was released, the scope of the report was modified from its originally intended purpose of providing interim estimates of PEB parameters. Instead, the Interim Performance Basis Report explained the process for implementation of the energy efficiency incentive mechanism, including the MPS and PEB calculation methods and tools, and the Energy Division's scenario analysis of the range of likely ex-post MPS and PEB parameters.²⁹ Energy Division held a workshop on June 17, 2007 to discuss the report with parties and stakeholders.

On August 20, 2008, the Energy Division released draft *ex-ante* PEB parameters (DEER 2006-2007 Measures Update) to be used for calculating the first interim incentive payment,³⁰ and associated documentation for party and stakeholder comments.³¹ The Energy Division held workshops on September 8 and 17, 2008 to discuss the DEER 2006-2007 measure updates.³² After considering party and stakeholder comments, the Energy Division and its contractors finalized the DEER 2006-2007 updates on October 10, 2008 and notified the R.06-04-010 service list that the final DEER 2006-2007 measure updates were available to download³³ and that the Energy Division's responses to comments were posted on the Energy Division's Public

²⁷ Site-specific M&V refers to the measurement and verification that takes place at a single customer's facility. Site-specific M&V plans were necessary for many large nonresidential energy efficiency projects.

²⁸ See Appendix B-2 for a detailed timeline of the EM&V stakeholder participation process.

²⁹ Interim Performance Basis Report, p. 2, May 5, 2008. Provided in ORA workpapers <http://ora.ca.gov/RRIMRehearing.aspx> (Email from Tim Drew Mon 5/5/2008 6:29 PM)

³⁰ D.08-01-042, Ordering Paragraph 3(b), p. 29.

³¹ *Assigned Commissioner Ruling to Supplement the Record for the Resolution of Utility Incentive Claims for 2006-2007*, issued October 28, 2008, in R.06-04-010.

³² See ORA workpapers available at <http://ora.ca.gov/RRIMRehearing.aspx> (Email from Peter Lai Mon 8/25/2008 2:35 PM and Email from Peter Lai Thu 8/28/2008 1:17 PM).

³³ See ORA workpapers (Email from Peter Lai Fri 10/10/2008 5:36 PM).

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Document Area (PDA).³⁴ On October 28, 2008, the Assigned Commissioner issued a ruling taking Judicial Notice³⁵ of the final 2006-2007 DEER Measure Updates.³⁶

On October 20, 2008, the assigned ALJ issued a ruling extending the schedule for the Energy Division to review the Utilities' 2006 and 2007 interim incentive claims, originally set for August 2008 by D.07-09-043.³⁷ The ruling identified several reasons for the schedule extension, including time needed to update the 2006-2007 DEER parameters ordered in D.08-01-042, delays in starting the EM&V process, delays in getting data from the Utilities, and allowing adequate time for stakeholders to review the EM&V research plans.³⁸ The October 20, 2008 ALJ ruling required the submission of the Draft 2006-2007 Energy Efficiency Verification Report on November 15, 2008. Additionally, the October 20, 2008 ALJ ruling provided parties and stakeholders with 30 days to review the Draft Verification Report and submit written comments. The Energy Division held a full day workshop on December 5, 2008 to allow parties and stakeholders to discuss the Draft Verification Report with the Energy Division staff and consultants who helped prepare the report.³⁹ The October 20, 2008 ALJ ruling required that the Energy Division finalize the 2006-2007 verification report on January 15, 2009.

Section III C of ORA and TURN's proposal explains the subsequent EM&V activities that the Commission oversaw in this proceeding.

³⁴ Footnote 24 explains the PDA.

³⁵ Rule 13.9 of the Commission's Rules of Practice and Procedure provides that "Official notice may be taken of such matters as may be judicially noticed by the courts of the State of California pursuant to Evidence Code section 450 et seq."

³⁶ *Assigned Commissioner Ruling to Supplement the Record for the Resolution of Utility Incentive Claims for 2006-2007*, issued October 28, 2008 In R.06-04-010.

³⁷ *Administrative Law Judge's Ruling Extending Energy Division Schedule for Review of 2006 and 2007 Incentive Claims*, issued October 20, 2008 in R. 06-04-010.

³⁸ *Administrative Law Judge's Ruling Extending Energy Division Schedule for Review of 2006 and 2007 Incentive Claims*, issued October 20, 2008 in R. 06-04-010, p. 1.

³⁹ See ORA workpapers (*Email from Tim Drew Mon 12/1/2008 11:05 AM*).

APPENDIX B-2

TIMELINE OF STAKEHOLDER EM&V ACTIVITIES FOR THE 2006-2008 ENERGY EFFICIENCY PORTFOLIO

TIMELINE OF STAKEHOLDER EM&V ACTIVITIES FOR THE 2006-2008 ENERGY EFFICIENCY PORTFOLIOS

The following timeline includes many of the Energy Division's EM&V planning and implementation activities that involved interactions with Utilities and other stakeholders. While it is intended to be as comprehensive as possible, it only includes references to publically available information and broadly distributed emails. It does not include the numerous informal interactions between Energy Division and Utility staff that took place between 2004 and 2010. The timeline also includes relevant Commission decisions and rulings that adopted rules for stakeholder participation and/or ordered comments and workshops. The emails referenced in this table can be downloaded in their native format from ORA's workpapers at <http://ora.ca.gov/RRIMRehearing.aspx>.

KEY

	Commission Decision, Proposed Decision, or Ruling
	Energy Division (ED) Report
	ED Workshop, Webinar, Conference Call, or Meeting
	Utility and Stakeholder Written or Verbal Comments
	ED Response to Written or Verbal Comments

Date	Activity	References
2/6/2004	ACR Ordering Workshops on EE Goals, EM&V, and Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166470
3/22/2004	ED EE Savings Goals Report	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166470
3/26/2004	Pre-Workshop Comments and Proposals on EM&V	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166470
4/2/2004	ED Workshops on EM&V	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166471
4/14/2004	Opening Comments EE Savings Goals Report	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166470

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Date	Activity	References
4/20/2004	ED Workshop on EE Savings Goals Report	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166470
4/30/2004	Reply Comments on EE Savings Goals Report	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166470
6/4/2004	Pre-Workshop Opening Comments on Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166471
6/8/2004	ED Workshop EM&V Report	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166472
6/18/2004	Pre-Workshop Reply Comments on Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166473
6/23/2004	ED Workshop on Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166474
6/24/2004	ED Workshop on Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166475
6/25/2004	Opening Comments on EM&V Report	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166476
6/25/2004	ED Workshop on Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166477
7/9/2004	Reply Comments on EM&V Report	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166478
7/16/2004	Post-Workshop Comments on Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166479
7/30/2004	Post-Workshop Reply Comments on Avoided Costs	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=166480
8/3/2004	Proposed Decision on EE goals for program year 2006 and beyond	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=177298

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Date	Activity	References
8/23/2004	Opening Comments on EE savings goals PD	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
8/30/2004	Reply Comments on EE savings goals PD	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
9/30/2004	Decision 04-09-060 EE goals for program year 2006 and beyond	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=181210
11/29/2004	Proposed Decision on EE and EM&V Administration	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=183938
12/20/2004	Opening Comments on EE and EM&V Administration	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
12/28/2004	Reply Comments on EE and EM&V Administration	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
1/27/2005	Decision 05-01-055 on EE and EM&V Administration	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=188206
3/7/2005	ED serves draft EM&V Roadmap for comments	Email from Ariana Merlino Mon 3/7/2005 2:05 PM
3/17/2005	Proposed Decision on Performance Basis and EM&V Administration	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=190472
3/18/2005	Comments on ED Draft Roadmap	Email from Ariana Merlino Thu 3/10/2005 3:30 PM
4/6/2005	Opening Comments on Performance Basis and EM&V Administration	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
4/11/2005	Reply Comments on Performance Basis and EM&V Administration	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
4/21/2005	Decision 05-04-051 on Performance Basis and EM&V Administration	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=193954
6/29/2005	ED EM&V Workshop	Email from Tim Drew Tue 6/21/2005 10:36 AM

TIMELINE OF STAKEHOLDER EM&V ACTIVITIES FOR THE 2006-2008 ENERGY EFFICIENCY PORTFOLIOS

Date	Activity	References
6/30/2005	ED EM&V Workshop	Email from Tim Drew Tue 6/21/2005 10:36 AM
7/11/2005	Comments on ED EM&V Workshop	Email from Ariana Merlino Fri 7/1/2005 2:56 PM
8/3/2005	ALJ ruling Requesting Comments on Energy Division's Proposed EM&V Implementation Plan	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=200563
8/10/2005	ED Workshop on EM&V Protocols	Email from Peter Lai Thu 7/21/2005 11:25 AM
8/11/2005	ED Workshop on EM&V Protocols	Email from Peter Lai Thu 7/21/2005 11:25 AM
8/12/2005	Opening Comments on EM&V Implementation Plan	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
8/19/2005	Reply Comments on EM&V Implementation Plan	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:14455038594376::NO
8/30/2005	ALJ ruling Requesting Comments on Joint ED/Utility 2006-2008 EM&V Plans and Budgets	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=202214
9/1/2005	ED and utility staff meeting to develop joint 2006-2008 EM&V Budget	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=210381
9/2/2005	ED and utility staff meeting to develop joint 2006-2008 EM&V plan and budget	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=210381
9/2/2005	ALJ ruling adopting ED EM&V Implementation Plan	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=202411
9/7/2005	ED Staff serves Joint ED/Utility 2006-2008 EM&V plan and budget	Email from Ariana Merlino Wed 9/7/2005 6:35 PM
9/16/2005	Opening Comments on Joint ED/Utility 2006-2008 EM&V plan and budget	Email from Ariana Merlino Wed 9/7/2005 6:35 PM

TIMELINE OF STAKEHOLDER EM&V ACTIVITIES FOR THE 2006-2008 ENERGY EFFICIENCY PORTFOLIOS

Date	Activity	References
9/23/2005	Reply Comments on Joint ED/Utility 2006-2008 EM&V plan and budget	Email from Ariana Merlino Wed 9/7/2005 6:35 PM
10/4/2005	ALJ ruling soliciting comments on EM&V process protocols and EM&V technical protocols	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=204444
10/17/2005	Opening comments on EM&V process protocols and EM&V technical protocols	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:23386235206540::NO
10/24/2005	Reply comments on EM&V process protocols and EM&V technical protocols	http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:23386235206540::NO
12/2/2005	ED releases second draft EM&V Protocols	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=231096
12/13/2005	ED Workshop on EM&V Protocols	Email from Ariana Merlino Mon 11/14/2005 3:14 PM
12/14/2005	ED Workshop on EM&V Protocols	Email from Ariana Merlino Mon 11/14/2005 3:14 PM
1/11/2006	ALJ ruling adopting EM&V process protocols	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=218275
2/15/2006	ED Workshop on EM&V Protocols	Email from Julia Cordell Fri 2/3/2006 8:47 AM
2/16/2006	ED Workshop on EM&V Protocols	Email from Julia Cordell Fri 2/3/2006 8:47 AM
3/1/2006	Opening Comments on ED Workshop on EM&V Protocols	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=231096
3/8/2006	Reply Comments on ED Workshop on EM&V Protocols	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=231096
3/28/2006	ED workshop on EM&V priorities and risk analysis	Email from Julia Cordell Wed 3/15/2006 5:21 PM

TIMELINE OF STAKEHOLDER EM&V ACTIVITIES FOR THE 2006-2008 ENERGY EFFICIENCY PORTFOLIOS

Date	Activity	References
3/29/2006	ED workshop on EM&V priorities and risk analysis	Email from Julia Cordell Wed 3/15/2006 5:21 PM
3/31/2006	Comments on EM&V priorities and risk analysis	Email from Ariana Merlino Thu 3/30/2006 3:53 PM
4/7/2006	Comments on EM&V priorities and risk analysis	Email from Ariana Merlino Thu 3/30/2006 3:53 PM
4/25/2006	ALJ ruling adopting EM&V technical protocols	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=231096
7/12/2006	ED workshop on 2006-2008 DEER Update and other EM&V issues	Email from Tim Drew Wed 6/28/2006 4:03 PM
1/2/2007	ALJ ruling modifying the EM&V process protocols	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=2813
10/24/2007	ED Workshop on Net-to-Gross Methodology	Email from Tim Drew Fri 10/5/2007 6:52 PM
11/15/2007	ED Workshop on Net-to-Gross Methodology	Email from Tim Drew Tue 10/23/2007 2:53 PM
1/8/2008	ED Conference Call on New Construction / Codes & Standards EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/9/2008	ED Conference Call on PGE Industrial, SCE Industrial, PGE Food and Ag EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/10/2008	ED Conference Call on Specialized Commercial EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/10/2008	ED Conference Call on Small Commercial EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/11/2008	ED Conference Call on M&O, Education, and Information EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/15/2008	ED Conference Call on Commercial Facilities EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM

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Date	Activity	References
1/17/2008	ED Conference Call on Government Partnerships EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/18/2008	ED Conference Call on Major Commercial EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/18/2008	ED Conference Call on Commercial Retro-Commissioning EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/18/2008	ED Conference Call on Residential Retrofit EM&V	Email from Tim Drew Wed 1/9/2008 10:18 AM
1/21/2008	Comments on draft Commercial Facilities EM&V plan	Email from Tim Drew Thu 1/10/2008 7:12 PM
1/22/2008	Conference call on draft Generic Net-to-Gross Survey Instruments	Email from Tim Drew Tue 1/15/2008 11:42 AM
1/23/2008	Comments on draft Major Commercial EM&V plan	http://www.energydataweb.com/cpuc/comment.aspx?did=87
1/23/2008	Comments on draft Commercial Retro-Commissioning EM&V plan	http://www.energydataweb.com/cpuc/comment.aspx?did=88
1/25/2008	Comments on draft Southern California Industrial and Agricultural EM&V plan	Email from Tim Drew Thu 1/10/2008 7:12 PM
1/25/2008	Comments on draft PG&E Agricultural and Food Processing EM&V plan	Email from Tim Drew Thu 1/10/2008 7:12 PM
1/25/2008	Comments on draft Generic Net-to-Gross Survey Instruments	http://www.energydataweb.com/cpuc/comment.aspx?did=91 http://www.energydataweb.com/cpuc/comment.aspx?did=93

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Date	Activity	References
1/26/2008	Comments on draft New Construction and Codes and Standards EM&V plan	http://www.energydataweb.com/cpuc/comment.aspx?did=11
1/29/2008	Comments on draft Residential Retrofit EM&V plan	http://www.energydataweb.com/cpuc/comment.aspx?did=82
1/29/2008	Comments on draft Government Partnerships EM&V plan	http://www.energydataweb.com/cpuc/comment.aspx?did=89
1/29/2008	Comments on draft Specialized Commercial EM&V plan	http://www.energydataweb.com/cpuc/comment.aspx?did=90
1/29/2008	Comments on draft Small Commercial EM&V plan	Email from Tim Drew Thu 1/10/2008 7:12 PM
2/15/2008	Comments on EM&V survey instruments	http://www.energydataweb.com/cpuc/comment.aspx?did=96
2/29/2008	Comments on general EM&V issues	http://www.energydataweb.com/cpuc/comment.aspx?did=95
3/21/2008	Comments on appliance recycling EM&V survey instrument	http://www.energydataweb.com/cpuc/comment.aspx?did=109
3/21/2008	Comments on multi-family EM&V survey instruments	http://www.energydataweb.com/cpuc/comment.aspx?did=110
3/21/2008	Comments on single-family EM&V survey instruments	http://www.energydataweb.com/cpuc/comment.aspx?did=115
4/4/2008	Comments on CFL EM&V survey	http://www.energydataweb.com/cpuc/comment.aspx?did=118
4/12/2008	Comments on upstream lighting CFL EM&V survey	http://www.energydataweb.com/cpuc/comment.aspx?did=121
4/12/2008	Comments on HVAC EM&V survey	http://www.energydataweb.com/cpuc/comment.aspx?did=111

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Date	Activity	References
5/5/2008	ED Interim Performance Basis Report	Email from Tim Drew Mon 5/5/2008 6:29 PM
		Email from Peter Lai Mon 4/7/2008 5:53 PM
5/16/2008	Comments on draft DEER NTG updates	http://www.energydataweb.com/cpuc/comment.aspx?did=126
		http://www.energydataweb.com/cpuc/comment.aspx?did=128
5/21/2008	Comments on draft DEER EUL updates	http://www.energydataweb.com/cpuc/comment.aspx?did=133
5/21/2008	Comments on DEER RUL/EUL estimates	http://www.energydataweb.com/cpuc/comment.aspx?did=158
5/21/2008	Comments on DEER measure cost estimates	http://www.energydataweb.com/cpuc/comment.aspx?did=161
5/23/2008	Comments on draft DEER NTG updates	http://www.energydataweb.com/cpuc/comment.aspx?did=149
6/6/2008	Comments on DEER EUL estimates	http://www.energydataweb.com/cpuc/comment.aspx?did=168
6/7/2008	Comments on lighting manufacturer survey	http://www.energydataweb.com/cpuc/comment.aspx?did=156
		http://www.energydataweb.com/cpuc/comment.aspx?did=155
6/10/2008	Comments on lighting metering study	http://www.energydataweb.com/cpuc/comment.aspx?did=166
6/17/2008	ED workshop on Interim Performance Basis Report	Email from Tim Drew Mon 5/5/2008 6:29 PM
7/12/2008	Comments on ED Interim Performance Basis Report	Email from Tim Drew Mon 5/5/2008 6:29 PM

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Date	Activity	References
		http://www.energydataweb.com/cpuc/comment.aspx?did=151
		http://www.energydataweb.com/cpuc/comment.aspx?did=152
8/20/2008	ED Draft 2006-2007 DEER NTG and EUL Updates	Email from Peter Lai Wed 8/20/2008 5:12 PM
8/27/2008	ED Draft 2006-2007 DEER UES and Load Shapes Updates	Email from Peter Lai Wed 8/27/2008 10:41 AM
		Email from Peter Lai Wed 8/20/2008 5:12 PM
9/3/2008	Comments on ED Draft 2006-2007 DEER NTG and EUL Updates	http://www.energydataweb.com/cpuc/comment.aspx?did=188
		http://www.energydataweb.com/cpuc/comment.aspx?did=189
9/8/2008	Conference Call on Draft 2006-2007 DEER NTG and EUL Updates	Email from Peter Lai Mon 8/25/2008 2:35 PM
		Email from Peter Lai Wed 8/27/2008 10:41 AM
9/11/2008	Comments on ED Draft 2006-2007 DEER UES and Load Shapes Updates	http://www.energydataweb.com/cpuc/comment.aspx?did=191
		http://www.energydataweb.com/cpuc/comment.aspx?did=192
9/15/2008	ED Workshop on New Codes and Standards EM&V	Email from Ayat Osman Thu 8/28/2008 3:00 PM
9/17/2008	Conference Call on Draft 2006-2007 DEER UES and Load Shapes Updates	Email from Peter Lai Thu 8/28/2008 1:17 PM
10/10/2008	ED Final DEER 2006-2007 Measures Updates	Email from Peter Lai Fri 10/10/2008 5:36 PM

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Date	Activity	References
10/10/2008	ED responses to comments on DEER 2006-2007 EUL Updates	http://www.energydataweb.com/cpucFiles/topics/28/EUL%20Responses%20to%20Comments%20post%2010-10-08.zip
10/10/2008	ED responses to comments on DEER 2006-2007 NTG Updates	http://www.energydataweb.com/cpucFiles/topics/21/NTG%20Reply%20to%20Comments%2010-10-08.pdf
10/17/2008	Meeting notes DEER 2006-2007 NTG Updates	http://www.energydataweb.com/cpucFiles/topics/27/DEER%200607%20ntg%20meeting%20notes%20Sept%2024%2008%20final.pdf
10/20/2008	ALJ ruling requiring Draft 2006-2007 Verification Report on Nov. 15.	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=17013
10/28/2008	ACR taking judicial notice of the final 2006-2007 DEER update	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=17266
11/18/2008	ED Draft 1st Verification EM&V Report	Email from Tim Drew Tue 11/18/2008 4:33 PM
12/5/2008	ED Workshop on 1st Draft Verification Report	Email from Tim Drew Mon 12/1/2008 11:05 AM
1/14/2009	ED responses to comments on DEER 2006-2007 UES and LS Updates	http://www.energydataweb.com/cpucFiles/topics/30/DEER06-07ExAnteUpdateComments_NonResUES-LS-081105.zip
		http://www.energydataweb.com/cpucFiles/topics/29/DEER06-07ExAnteUpdateComments_ResUES-LS-081105.zip

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Date	Activity	References
1/29/2009	Commission adopts OIR 09-01-019	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=371103
2/5/2009	ED final 2006-2007 Verification Report	Email from Tim Drew Thu 2/5/2009 5:06 PM
7/30/2009	ALJ ruling ordering the issuance of the Second ED Verification Report by Draft Resolution	http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=23800
8/6/2009	ED distributes Draft Second Interim Verification Report via Draft Resolution E-4272	Email from Kay Hardy Thu 8/6/2009 2:09 PM
8/26/2009	Opening comments on Draft Resolution E-4272	Email from Kay Hardy Thu 8/6/2009 2:09 PM
8/31/2009	Reply comments on Draft Resolution E-4272	Email from Kay Hardy Thu 8/6/2009 2:09 PM
9/19/2009	ED workshop on Draft Second Interim Verification Report	Email from Tom Brennemen Thu 9/17/2009 2:09 PM
10/15/2009	Commission adopts Resolution E-4272	http://docs.cpuc.ca.gov/advancedsearchform.aspx
12/7/2009	ED Workshop on Evaluation Reporting Tools	Email from Carmen Best Wed 12/2/2009 10:58 AM
12/9/2009	ED conference call on draft final New Construction EM&V report	Email from Ayat Osman Wed 12/2/2009 11:06 PM
12/10/2009	ED conference call on draft final Codes and Standards EM&V report	Email from Ayat Osman Wed 12/2/2009 11:06 PM
12/10/2009	ED conference call on draft final PG&E Food Processing and Agriculture EM&V report	Email from Katherine Hardy Thu 12/3/2009 11:46 AM

**TIMELINE OF STAKEHOLDER EM&V ACTIVITIES FOR
THE 2006-2008 ENERGY EFFICIENCY PORTFOLIOS**

Date	Activity	References
12/14/2009	ED conference call on draft final PG&E Fabrication, Process and Manufacturing EM&V report	Email from Katherine Hardy Tue 12/8/2009 11:27 AM
12/14/2009	ED conference call on draft final Southern California Industrial and Agriculture EM&V report	Email from Katherine Hardy Tue 12/8/2009 11:29 AM
12/15/2009	ED conference call on draft final Residential Retrofit EM&V report	Email from Mikhail Haramati Thu 12/10/2009 8:55 PM
12/16/2009	ED conference call on draft final Commercial Facilities EM&V report	Email from Katherine Hardy Tue 12/8/2009 3:27 PM
12/16/2009	ED conference call on draft final Upstream Lighting EM&V report	Email from Mikhail Haramati Thu 12/10/2009 9:04 PM
12/17/2009	ED conference call on draft final Major Commercial EM&V report	Email from George Tagnipes Mon 12/7/2009 7:35 PM
12/17/2009	ED conference call on draft final Commercial Retro-Commissioning EM&V report	Email from George Tagnipes Mon 12/7/2009 7:35 PM
12/18/2009	ED conference call on draft final Government Partnerships EM&V report	Email from Tim Drew Wed 12/9/2009 5:43 PM
12/21/2009	ED conference call on draft final Small Commercial EM&V report	Email from George Tagnipes Mon Tue 12/8/2009 1:50 PM
12/21/2009	ED conference call on draft final Specialized Commercial EM&V report	Email from George Tagnipes Mon Tue 12/8/2009 1:50 PM http://www.energydataweb.com/cpuc/comment.aspx?did=330

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Date	Activity	References
		http://www.energydataweb.com/cpuc/comment.aspx?did=329
12/21/2009	ED conference call on draft final HVAC EM&V report	Email from Jeorge Tagnipes Mon Tue 12/8/2009 1:50 PM
12/22/2009	ED conference call on draft final Residential Retrofit net-to-gross methodology	Email from Mikhail Haramati Mon 12/21/2009 10:01 AM
		Email from Ayat Osman Fri 12/11/2009 4:15 PM
12/22/2009	Comments on draft final New Construction and Codes and Standards EM&V report	http://www.energydataweb.com/cpuc/comment.aspx?did=330
		http://www.energydataweb.com/cpuc/comment.aspx?did=328
12/31/2009	Comments on draft final Commercial Retro-Commissioning EM&V report	Email from Jeorge Tagnipes Mon 12/7/2009 7:35 PM
		http://www.energydataweb.com/cpuc/comment.aspx?did=361
12/31/2009	Comments on draft final Major Commercial EM&V report	Email from Jeorge Tagnipes Mon 12/7/2009 7:35 PM
		http://www.energydataweb.com/cpuc/comment.aspx?did=362
		http://www.energydataweb.com/cpuc/comment.aspx?did=448
1/4/2010	Comments on draft final Small Commercial EM&V report	Email from Jeorge Tagnipes Mon Tue 12/8/2009 1:50 PM
		http://www.energydataweb.com/cpuc/comment.aspx?did=400

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Date	Activity	References
1/6/2010	Comments on draft final Government Partnerships EM&V report	Email from Tim Drew Wed 12/9/2009 5:43 PM http://www.energydataweb.com/cpuc/comment.aspx?did=382
		http://www.energydataweb.com/cpuc/comment.aspx?did=381
1/7/2010	Comments on draft final Residential Retrofit EM&V report	Email from Mikhail Haramati Thu 12/10/2009 8:55 PM http://www.energydataweb.com/cpuc/comment.aspx?did=30
1/7/2010	Comments on draft final Upstream Lighting EM&V report	Email from Mikhail Haramati Thu 12/10/2009 8:55 PM http://www.energydataweb.com/cpuc/comment.aspx?did=316
1/8/2010	Comments on draft final Specialized Commercial EM&V report	Email from Jeorge Tagnipes Mon Tue 12/8/2009 1:50 PM http://www.energydataweb.com/cpuc/comment.aspx?did=404
		http://www.energydataweb.com/cpuc/comment.aspx?did=403
1/8/2010	Comments on draft final HVAC EM&V report	Email from Jeorge Tagnipes Mon Tue 12/8/2009 1:50 PM http://www.energydataweb.com/cpuc/comment.aspx?did=403
		http://www.energydataweb.com/cpuc/comment.aspx?did=404

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Date	Activity	References
1/8/2010	Comments on draft final PG&E Food Processing and Agriculture EM&V report	Email from Katherine Hardy Tue 12/22/2009 4:11 PM
		http://www.energydataweb.com/cpuc/comment.aspx?did=336
1/11/2010	Comments on draft final Commercial Facilities EM&V report	Email from Katherine Hardy Tue 12/22/2009 4:11 PM
		http://www.energydataweb.com/cpuc/comment.aspx?did=375
1/11/2010	Comments on draft final PG&E Fabrication, Process and Manufacturing EM&V report	Email from Katherine Hardy Tue 12/22/2009 4:11 PM
		http://www.energydataweb.com/cpucFiles/topics/4/Appendix_F_Responses_to_Comments.pdf
		http://www.energydataweb.com/cpucFiles/topics/4/PG&E_Fab_06-08_Appendix_F_Responses_to_Comments.pdf
1/11/2010	Comments on draft final Southern California Industrial and Agriculture EM&V report	Email from Katherine Hardy Tue 12/22/2009 4:11 PM
		http://www.energydataweb.com/cpucFiles/topics/2/Appendix_E_Responses_to_Comments_Received_on_Draft_Report.pdf
2/9/2010	ED responses to comments on draft final PG&E Fabrication, Process and Manufacturing EM&V report	http://www.energydataweb.com/cpucFiles/topics/4/Appendix_F_Responses_to_Comments.pdf

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Date	Activity	References
		http://www.energydataweb.com/cpucFiles/topics/4/PG&E_Fab_06-08_Appendix_F_Responses_to_Comments.pdf
2/9/2010	ED responses to comments on nonresidential NTG methods	http://www.energydataweb.com/cpucFiles/topics/3/ResponseToJan2008SRAComments.doc
2/9/2010	ED responses to comments on residential and small commercial NTG methods	http://www.energydataweb.com/cpucFiles/topics/3/Res&SmallCommSRA_Response.doc
2/9/2010	ED responses to comments on draft final Southern California Industrial and Agriculture EM&V report	http://www.energydataweb.com/cpucFiles/topics/2/Appendix_E_Responses_to_Comments_Received_on_Draft_Report.pdf
2/19/2010	ED responses to comments on draft final Commercial Facilities EM&V report	http://www.energydataweb.com/cpucFiles/topics/15/ComFac%20App%20%20PGE%20and%20SDGE%20public%20comments%20High%20Tech.doc
2/19/2010	ED responses to IOU concerns Regarding NTG using self-report methods	http://www.energydataweb.com/cpucFiles/topics/15/Non-Res%20SRA%20Paper%20Final.doc
3/2/2010	ED responses to comments on draft final Commercial Facilities EM&V report appendices	http://www.energydataweb.com/cpucFiles/topics/15/ADM%20Responses%20to%20PECI%20Comments%20on%20HIM%20Appendix.doc
4/15/2010	ED Draft Final 2006-2008 Energy Efficiency Evaluation Report	Email from Carmen Best Thu 4/15/2010 4:40 PM
4/23/2010	ED Workshop on Evaluation Reporting Tools	Email from Carmen Best Thu 4/15/2010 4:40 PM

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Date	Activity	References
4/30/2010	ED Workshop on ED Draft Final 2006-2008 Energy Efficiency Evaluation Report	Email from Carmen Best Thu 4/15/2010 4:40 PM
5/17/2010	Comments on ED Draft Final 2006-2008 Energy Efficiency Evaluation Report	Email from Carmen Best Thu 4/15/2010 4:40 PM http://www.energydataweb.com/cpuc/comment.aspx?did=564
7/9/2010	ED Final 2006-2008 Energy Efficiency Evaluation Report	Email from Carmen Best Fri 7/9/2010 4:09 PM

APPENDIX B-3

TABLE 25 2006-2008 ENERGY EFFICIENCY EVALUATION REPORT

Table 25. Comparative of Cumulative 2004-2008 Evaluated Results to Goals

	PGE	SCE	SDGE	SoCalGas	Total
Savings Goals PY 2004-2008					
Cumulative Savings (GWH)	4,313	4,788	1,175		10,488
Peak Savings (MW)	936	1,006	223		2,206
Cumulative Natural Gas Savings (MMTh)	64		13	77	154
EE Portfolio Savings (Reported) PY 2004-2008					
Cumulative Savings (GWH)	6,993	6,195	1,483		14,670
Peak Savings (MW)	1,202	1,219	268		2,689
Cumulative Natural Gas Savings (MMTh)	111		10	93	214
EE Portfolio Savings (Evaluated) PY 2004-2008					
Cumulative Savings (GWH)	2,764	3,461	707		6,931
Peak Savings (MW)	532	655	132		1,318
Cumulative Natural Gas Savings (MMTh)	41		7	43	92
50% C&S Savings (Evaluated) PY 2006-2008					
Cumulative Savings (GWH)	157	162	37		356
Peak Savings (MW)	30	31	7		68
Cumulative Natural Gas Savings (MMTh)	2		0	3	6
EM&V Adjusted LIEE Savings PY 2004-2008					
Cumulative Savings (GWH)	124	107	28		258
Peak Savings (MW)	25	22	7		54
Cumulative Natural Gas Savings (MMTh)	6		1	5	12
Performance against 2004-2008 Cumulative Goals					
Percent of GWH Goal	71%	78%	66%		72%
Percent of MW Goal	63%	70%	65%		65%
Percent of MMTh Goal	76%		66%	67%	71%

Combined, the utilities achieved roughly 72 percent of the statewide electric goals, and 65 and 71 percent of the MW and MM therm goals respectively in the 2004-2008 program implementation period. The increase in the therm savings relative to the goal reflects the dual effects of a reduced therm goal for PGE and SDGE and the fact that negative therm interactive effects were not included in the 2004-2005 evaluation studies.

The charts within **Figure 41. Comparison of Evaluated Savings against the Commission Adopted Goals** show the relative accomplishment of energy savings against both the 2004-2008 and 2006-2008 goals.